UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PAUL HAEFNER

Appeal 2008-3838
Application 10/801,139
Technology Center 3700

Decided[1]: March 27, 2009

Before DONALD E. ADAMS, LORA M. GREEN, and
RICHARD M. LEBOVITZ, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

This appeal under 35 U.S.C. § 134 involves claims 1-48, the only claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

The claims are directed to an implantable device (claims 1-16); a medical system (claims 17-31); a method (claims 32-43); and an implantable device (claims 44-48). Claims 1, 17, 30, 32, 35, 38, and 44 are illustrative:

1. An implantable device, comprising:
an implantable housing;
a plurality of implantable electrodes coupled to the housing and configured for sensing cardiac electrical activity;
detection circuitry provided in the housing and coupled to at least some of the plurality of electrodes, the detection circuitry producing a cardiac electrical signal in response to the sensed cardiac electrical activity;
an implantable sensor configured to sense movement of a heart and produce a sensor signal in response to the sensed heart movement;
sensor circuitry provided in the housing and coupled to the sensor, the sensor circuitry configured to produce an audio signal in response to the sensor signal;
memory provided in the housing and coupled to the detection circuitry and sensor circuitry, the memory configured to store the audio signal and the cardiac electrical signal;
a controller provided in the housing and coupled to the memory, detection circuitry, and sensor circuitry; and
communications circuitry provided in the housing and coupled to the controller, the communications circuitry configured to telemeter the cardiac electrical signal and the audio signal to a patient-external device.

17. A medical system, comprising:
a patient-implantable device, comprising:
a housing;
a plurality of electrodes coupled to the housing and configured for sensing cardiac electrical activity;

detection circuitry provided in the housing and coupled to at least some of the plurality of electrodes, the detection circuitry producing a cardiac electrical signal in response to the sensed cardiac electrical activity;

a sensor configured to sense movement of a heart and produce a sensor signal in response to the sensed heart movement;

sensor circuitry provided in the housing and coupled to the sensor, the sensor circuitry configured to produce an audio signal in response to the sensor signal;

memory provided in the housing and coupled to the detection circuitry and sensor circuitry, the memory configured to store the audio signal and the cardiac electrical signal;

a controller provided in the housing and coupled to the memory, detection circuitry, and sensor circuitry; and

communications circuitry provided in the housing and coupled to the controller, the communications circuitry configured to telemeter the cardiac electrical signal and the audio signal; and

a patient-external device comprising:

patient-external communications circuitry configured to receive the cardiac electrical signal and the audio signal telemetered from the patient-implantable device; and

a user interface coupled to the patient-external communications circuitry, the user interface configured for providing a visual output representative of the cardiac electrical signal and an audio output representative of the audio signal.

30. The system of claim 17, wherein at least one of the patient-implantable device and patient-external device provides a time correlation between the cardiac electrical signal and the audio signal.

32. A method, comprising:

sensing, from within a patient, movement of a heart and producing a sensor signal in response to the sensed heart movement;

producing, within the patient, an audio signal using the sensor signal;

detecting, within the patient, cardiac electrical activity and producing a cardiac electrical signal in response to the detected cardiac electrical activity;

storing, within the patient, the audio signal and the cardiac electrical signal; and

telemetering the audio signal and cardiac electrical signal to a patient-external location.

35. The method of claim 32, wherein the sensor signal comprises an accelerometer signal.

38. The method of claim 32, wherein storing comprises time correlating the audio signal and the cardiac electrical signal.

44. An implantable device, comprising:
means for detecting a cardiac electrical signal;
means for detecting a cardiac non-electrophysiologic activity transduceable to an audio signal;
means for storing the cardiac electrical signal and the audio signal within a patient; and
means for communicating the cardiac electrical signal and the audio signal to a patient-external location.

The Examiner relies on the following evidence:

Schaldach	US 4,867,163	Sep. 19, 1989
Gessman	US 5,321,618	Jun. 14, 1994
Kadhiresan	US 5,935,081	Aug. 10, 1999
Riff et al.	US 2002/0026223 A1	Feb. 28, 2002
Turcott	US 6,477,406 B1	Nov. 5, 2002

The rejections presented by the Examiner are as follows:

1. Claims 1-3, 5-7, 9, 10, 12, 13, 16, 17, 19-21, 25, 30, 32, 35, 37-39, 41, and 44-46 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Schaldach.

2. Claims 17, 19-21, 41, 45, and 46 stand rejected under 35 U.S.C § 103(a) as unpatentable over Schaldach.

3. Claims 4 and 36 stand rejected under 35 U.S.C § 103(a) as unpatentable over the combination of Schaldach and Turcott.

4. Claims 8, 11, and 40 stand rejected under 35 U.S.C § 103(a) as unpatentable over the combination of Schaldach and Kadhiresan.

5. Claims 14, 18, 22-24, 31, 33, 34, 43, and 47 stand rejected under 35 U.S.C § 103(a) as unpatentable over the combination of Schaldach and Gessman.

6. Claims 15, 26-29, 42, and 48 stand rejected under 35 U.S.C § 103(a) as unpatentable over the combination of Schaldach and Riff.

We affirm the rejection of claims 1-3, 5-7, 9, 10, 12, 13, 16, 32, 37-39, 41, and 44-46 under 35 U.S.C. § 102(b) as being anticipated by Schaldach. We reverse the rejection of claims 17, 19-21, 25, 30, and 35 under 35 U.S.C. § 102(b) as being anticipated by Schaldach. We affirm all the rejections under 35 U.S.C § 103(a).

Anticipation:

Appellant provides separate arguments for the following groups of claims: I. Claims 1-3, 5-7, 9, 10, 12, 13, 16, 32, 37, 39, 41, and 44-46; II. Claims 17, 19-21, and 25; III. Claim 35; IV. Claim 30 and V. Claim 38. Claims 1, 17, 30, 35, and 38 are representative.

PRINCIPLES OF LAW

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros, Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

Claim language must be analyzed "not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art." *In re Moore*, 439 F.2d 1232, 1235 (CCPA 1971).

Claim 1:

ISSUE

Does the preponderance of the evidence support a conclusion that Schaldach teaches an implantable device that comprises sensor circuitry configured to produce an audio signal, memory configured to store the audio signal, and circuitry configured to telemeter the audio signal along with a cardiac electrical signal to a patient-external device?

FINDINGS OF FACT

FF 1. Appellant's Specification discloses that

> [a] user interface is coupled to the patient-external communications circuitry, the user interface [is] configured for providing a visual output representative of the cardiac electrical signal and an audio output *representative* of the audio signal. The user interface is configured for providing a *visual output representative of the audio signal* and an audio output representative of the cardiac electrical signal. *A display is configured to display a representation of* one or both of the cardiac electrical signal and *the audio signal. The display may present one or both of textual and graphical information associated with* one or both of the cardiac electrical signal and *the audio signal. An audio output device* may be included and *configured to broadcast the audio signal.*

(Spec. 6: 6-15 (emphasis added)).

FF 2. Appellant's Specification discloses that "[t]he user interface may include a speaker configured to broadcast the audio signal" (Spec. 6: 27 - 7: 1).

FF 3. Appellant's Specification discloses that "[i]t is understood that the heart sound information may be presented visually, as in Figure 4, and/or may be broadcast as an audio signal" (Spec. 30: 25-26).

FF 4. Schaldach teaches "a cardiac pace maker with circuitry means for varying at least one pacing parameter, in particular the pacing rate, as a function of a signal picked up in the patient's body as an input variable and correlated with physical exertion" (Schaldach, col. 1, ll. 8-12).

FF 5. The Examiner finds that Schaldach teaches an implantable device comprising memory and circuitry for telemetering a cardiac electrical signal and audio signal to a patient external device (Ans. 3-4).

FF 6. The Examiner finds that Schaldach utilizes a sound pickup (e.g., a sensor) to produce an audio signal that is communicated (via telemetry) to a patient-external device in visual form (Ans. 9-10).

FF 7. Schaldach teaches a device that comprises a pickup for at least one measured value that can be picked up inside or outside the body (Schaldach, col. 7, ll. 30-32). Schaldach teaches that "measured values pickups are known in principle, in the form of . . . measuring electrodes for ascertaining impedance cardiographic (electroplethysmographic) data . . . or sound pickups for measured values that have a relationship to mechanical contractions" (Schaldach, col. 7, ll. 53-62). Schaldach teaches that "the measured variables picked up in the heart itself, and which form a standard for the chamber filling, and thus are already linked with a variable characterizing the cardiac output . . . can advantageously be utilized for varying the pacing parameters" (Schaldach, col. 7, ll. 63-68)

FF 8. Schaldach teaches that "analog output signals of the measured value pickups are each supplied to an analog/digital converter connected to their output side, which converts the input signals into corresponding signals that are processable with the digital memory means or signal processors...." (Schaldach, col. 8, ll. 10-15).

FF 9. Schaldach teaches that the device includes a microprocessor system that is capable of bidirectional communication with an external control unit by means of telemetry (Schaldach, col. 8, ll. 19-24).

FF 10. Schaldach teaches that the device comprises a video interface to display data graphically (*see, e.g.,* Schaldach, col. 9, ll. 35-49). This provides the physician with the ability to access and manipulate various measured values to provide improved control of cardiac stimulation (Schaldach, col. 2, ll. 14-29).

ANALYSIS

Appellant contends that the "Examiner's interpretation of the term 'audio signal' effectively and impermissibly reads out of this claim term the word (i.e., limitation) 'audio'" (Reply Br. 14). Stated differently, Appellant appears to be under the impression that the term "audio signal" as it appears in claim 1 must be interpreted as a signal that can be heard, e.g., a sound. We disagree.

Appellant's Specification makes clear that the user interface may represent the audio signal as either a visual or audible output (FF 1-2). As a visual output the user interface is configured to display a representation of the audio signal (FF 1). Schaldach teaches this configuration (FF 4-10) and therefore reads on the invention set forth in claim 1. In the alternative, Appellant's Specification discloses that the user interface may be configured with a speaker to "broadcast" the audio signal (FF 2). There is no requirement in Appellant's claim 1 that the audio signal be broadcast - e.g., represented in an audible form. We appreciate Appellant's clarification that "a visual output is an output that can be seen and an audio output is an

output that can be heard" (Reply Br. 14). For the reasons discussed above, Appellant's claim 1 does not require the signal to be "output", much less "output" in a form that can be heard. Appellant's claim 1 only requires that the "communications circuitry [be] configured to telemeter the cardiac electrical signal and the audio signal to a patient-external device" (Claim 1). Appellant's claim 1 leaves open how patient-external device "outputs" these signals (e.g., visually or audibly) to a user.

Appellant contends that "Schaldach does not use the term 'audio' anywhere in its disclosure" (App. Br. 10; Reply Br. 14). We are not persuaded. Appellant identifies no principle of law that requires a prior art reference to use the same terminology as Appellant.

Appellant contends that Schaldach's sound pickups (column 7, line 61) and the data picked up by Schaldach's acoustic receivers "do not correspond to the claimed audio signal, and there is no indication that such data is communicated to a patient-external location as audio signals" (App. Br. 11). Appellant contends that

> [T]he signals derived from the measured value pickups, such as "pressure or sound pickups" of column 7, line 60, are used to control pacing, including pacing rate. In particular, Schaldach, at column 20, lines 67-68, describes that the pressure or sound pickups measure stroke volume which is used in controlling pacing, including pacing rate.

(Reply Br. 16; *see also* App. Br. 11-12.) In this regard, Appellant contends that Schaldach's "pressure or sound pickups 'can advantageously be utilized for varying the pacing parameters (in particular, [the] heart rate). Column 7, lines 53-68 (*emphasis added*)" (Reply Br. 15). We are not persuaded.

Notwithstanding, Appellant's contentions to the contrary, Schaldach teaches that all "the measured variables picked up in the heart itself, and

which form a standard for the chamber filling, and thus are already linked with a variable characterizing the cardiac output . . . can advantageously be utilized for varying the pacing parameters" (FF 7). Schaldach teaches a device that comprises sensors for both cardiac electrical and audio signals ("sound pickups . . . that have relationship to mechanical contractions") including the requisite circuitry, memory, and telemetry requirements to telemeter both the cardiac electrical signal and the audio signal to a patient-external device (FF 4-10). In addition, Schaldach teaches that the output signals of the measured value pickups can be communicated via telemetry to an external control unit thereby providing a physician with improved control of cardiac stimulation through the device (FF 10). Accordingly, we are not persuaded by Appellant's contention that it would require undue experimentation to arrive at Appellant's claimed device wherein an audio signal or other signal containing audio signal information communicated via telemetry to a patient-external device along with a cardiac electrical signal (Reply Br. 16-17).

CONCLUSION OF LAW

The preponderance of the evidence on this record supports a conclusion that Schaldach teaches an implantable device that comprises sensor circuitry configured to produce an audio signal, memory configured to store the audio signal, and circuitry configured to telemeter the audio signal along with a cardiac electrical signal to a patient-external device.

The rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Schaldach is affirmed. Claims 2-3, 5-7, 9, 10, 12, 13, 16, 32, 37, 39, 41, and 44-46 fall together with claim 1. 37 C.F.R. § 41.37(c)(1)(vii).

Claims 17, 19-21, 25 and 30:

ISSUE

Did the Examiner meet his burden of establishing that Schaldach teaches an audio output representative of the audio signal?

FINDINGS OF FACT

FF 11. The Examiner finds that Schaldach teaches a user interface comprising a monitor (157) and a light wand (158) (Ans. 5; Schaldach, col. 9, ll. 38 and 50).

ANALYSIS

Claim 17 requires, *inter alia*, "an audio output representative of the audio signal" (Claim 17). Claims 19-21 and 25 depend directly on claim 17.

We interpret the term "audio signal" as some form of data transmission that can be displayed either visually or audibly. We interpret the term "audio output" to mean something capable of making a sound, e.g., a speaker. This interpretation is consistent with Appellant's Specification, which discloses that an audio output device may be included and configured to broadcast the audio signal, e.g., through the use of a speaker (FF 1-2).

The Examiner failed to identify a teaching in Schaldach of a device that comprises an audio output representative of the audio signal.

Appellant additionally contends that "if the § 102(b) rejection of independent Claim 17 is reversed, the rejection of Claim. . . 30 must also be reversed" (App. Br. 14). We agree.

CONCLUSION OF LAW

The Examiner failed to meet his burden of establishing that Schaldach teaches an audio output representative of the audio signal.

The rejection of claims 17, 19-21, 25, and 30 under 35 U.S.C. § 102(b) as being anticipated by Schaldach is reversed.

Claim 35:

ISSUE

Did the Examiner meet his burden of establishing that Schaldach teaches a method that comprises the production of an accelerometer sensor signal in response to the sensed heart movement?

FINDINGS OF FACT

FF 12. Schaldach teaches a device comprising a digital activity sensor that recognizes the "appearance of accelerations and decelerations beyond a predetermined threshold value, whether the patient at the time is generally at rest or in motion...." (Schaldach, col. 20, ll. 12-16).

FF 13. Appellants only reference to "acceleration" is in reference to "cardiac accelerations" (Spec. 28: 20).

ANALYSIS

Claim 32 is drawn to a method comprising "sensing, from within a patient, movement of a heart and producing a sensor signal in response to the sensed heart movement" (Claim 32). Claim 35 depends from and further limits the sensor signal of claim 32 to comprise an accelerometer signal.

Appellant contends that "[a]ny accelerometer signal taught by Schaldach is used to detect patient activity" not movement of a heart (App. Br. 14). We agree.

The Examiner asserts that since "the heart is part of the body . . . movement of the body detects movement of the heart" (Ans. 10). We are not persuaded. We find that a person of ordinary skill in this art would appreciate that a movement of the heart is different from the movement of an entire body which contains a heart. Claims must be read in light of the Specification and from the perspective of a person of ordinary skill in the art. *In re Moore*, 439 F.2d at 1235.

The Examiner fails to identify any teaching in Schaldach to support a conclusion that a change in a patient's acceleration will necessarily correlate with a sensed heart movement, e.g., the acceleration of heart movement.

CONCLUSION OF LAW

The Examiner failed to meet his burden of establishing that Schaldach teaches a method that comprises the production of an accelerometer sensor signal in response to the sensed heart movement. The rejection of claim 35 under 35 U.S.C. § 102(b) as being anticipated by Schaldach is reversed.

Claim 38:

ISSUE

Does the preponderance of the evidence on this record support a conclusion that Schaldach teaches a method wherein two parameters, such as an audio signal and a cardiac electrical signal, are temporally correlated?

FINDINGS OF FACT

FF 14. The Examiner finds that "Schaldach discloses that two 'characteristic fields', such [as] the audio and electrical signals, can be displayed along with a time axis (col. 23, lines 39-65), rendering the variables 'time correlated'" (Ans. 11).

ANALYSIS

Appellant contends that "Schaldach merely teaches that two characteristic fields may be superimposed but does not teach that these two characteristic fields are time correlated as it would be understood by a skilled artisan" (App. Br. 14). We are not persuaded. As the Examiner points out, "Schaldach discloses that two 'characteristic fields', such [as] the audio and electrical signals, can be displayed along with a time axis (col. 23, lines 39-65), rendering the variables 'time correlated'" (FF 14).

CONCLUSION OF LAW

The preponderance of the evidence on this record supports a conclusion that Schaldach teaches a method wherein two parameters, such as an audio signal and a cardiac electrical signal, are temporally correlated.

The rejection of claim 38 under 35 U.S.C. § 102(b) as being anticipated by Schaldach is affirmed.

Obviousness:

PRINCIPLES OF LAW

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. *In re Fritch*, 972 F.2d 1260, 1265 (Fed. Cir. 1992). On appeal to this Board, Appellants must show that the Examiner has not sustained the required burden. *See* (1) *Ex parte Yamaguchi*, http://www.uspto.gov/web/offices/dcom/bpai/prec/fd074412.pdf, slip op. at 5 and 23 (BPAI Aug. 29, 2008) (precedential); (2) *Ex parte Fu*, http://www.uspto.gov/web/offices/dcom/bpai/prec/fd080601.pdf, slip op. at 5 and 20 (BPAI Mar. 31, 2008) (precedential); (3) *Ex parte Catan*, http://www.uspto.gov/web/offices/dcom/bpai/prec/fd070820.pdf, slip op. at 3 and 21 (BPAI Jul. 3, 2007) (precedential), and (4) *Ex parte Smith*, http://www.uspto.gov/web/offices/dcom/bpai/prec/fd071925.pdf, slip op. at 4, 9 and 23 (BPAI Jun. 25, 2007).

"[The] combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1731 (2007).

> When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that

> instance the fact that a combination was obvious to try might show that is was obvious under § 103.

Id. at 1742. It is proper to "take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 127 S.Ct. at 1741. *See also id.* at 1742 ("A person of ordinary skill is also a person of ordinary creativity, not an automaton."). "In determining whether obviousness is established by combining the teachings of the prior art, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." *In re GPAC Inc.*, 57 F.3d 1573, 1581 (Fed. Cir. 1995) (internal quotations omitted).

"Express suggestion to substitute one equivalent for another need not be present to render such substitution obvious." *In re Fout*, 675 F.2d 297, 301 (CCPA 1982); *see also In re Mayne*, 104 F.3d 1339, 1340 (Fed. Cir. 1997) ("Because the applicants merely substituted one element known in the art for a known equivalent, this court affirms [the rejection for obviousness]."). *Accord KSR*, 127 S.Ct. at 1740 ("when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result").

Schaldach:

ISSUE

Did Appellant meet his burden of establishing that it would not have been obvious to include a speaker in Schaldach's device to produce an audible output of Schaldach's audio signal?

ANALYSIS

Appellant asserts that Schaldach "fails to teach a patient-external device having a user interface configured for providing an audio output, as claimed" (App. Br. 15). Stated differently, Appellant contends that a person of ordinary skill in the art would not have recognized that Schaldach's audio signal could have been presented either visually (e.g., on a monitor or oscilloscope) or audibly (e.g., through a speaker). According to Appellant, "the Examiner's assertion to introduce . . . a speaker to the teachings of Schaldach would not result in a combination that corresponds to the claimed invention" (App. Br. 16). Appellant contends that "a speaker only produces sound when driven with an audio signal" (*id.*). In this regard, Appellant contends that "Schaldach does not teach that an audio signal is produced, stored or transferred, therefore, no sound would be generated by the speaker suggested by the Examiner" (*id.*). For the foregoing reasons we are not persuaded.

It is proper to "take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 127 S.Ct. at 1741. *See also id.* at 1742 ("A person of ordinary skill is also a person of ordinary creativity, not an automaton."). Schaldach teaches a device that comprises sensors for both cardiac electrical and audio signals including the requisite circuitry, memory, and telemetry requirements to telemeter both the cardiac electrical signal and the audio signal to a patient-external device (FF 4-10). In addition, Schaldach teaches that the output signals of the measured value pickups can be communicated via telemetry to an external control unit thereby providing a physician with improved control of cardiac stimulation through the device (FF 10). The only remaining question is whether a

person of ordinary skill in the art would display Schaldach's audio signal visually or audibly (e.g., through a speaker). In our opinion, a person of ordinary skill in the art would appreciate that an audio signal can be presented either visually or audibly. Accordingly, we find no error in the Examiner's prima facie case of obviousness.

CONCLUSION OF LAW

It would have been obvious to include a speaker in Schaldach's device to produce an audible output of Schaldach's audio signal.

The rejection of claim 17 under 35 U.S.C § 103(a) as unpatentable over Schaldach is affirmed.

Claims 19-21, 41, 45, and 46 fall together with claim 17. 37 C.F.R. § 41.37(c)(1)(vii).

The combination of Schaldach and Turcott:

ISSUE

Did Appellant meet his burden of establishing error in the Examiner's prima facie case of obviousness?

FINDINGS OF FACT

FF 15. The Examiner relies on Schaldach as set forth above (*see, e.g.,* Ans. 6).

FF 16. The Examiner finds that Schaldach fails to teach a sensor comprising "a piezoelectric transducer" (*id.*).

FF 17. Turcott teaches "[a]n implantable medical device such as a pacemaker or implantable cardioverter defibrillator or stand-alone hemo-

dynamic monitor that uses an acoustic transducer responsive to heart sounds to detect the hemodynamic status of a patient" (Turcott, Abstract).

FF 18. The Examiner finds that Turcott teaches an implanted device comprising a "piezoelectric transducer (col. 10, line 17)" (Ans. 6).

ANALYSIS

Claim 4 depends from and further limits the sensor of claim 1 to comprise a piezoelectric transducer.

Appellant contends that Turcott fails to overcome the deficiency of Schaldach as it is applied to claim 1 (App. Br. 18). For the foregoing reasons we find no deficiency in the Examiner's reliance on Schaldach with regard to claim 1. Accordingly, we are not persuaded by Appellant's contention to the contrary.

Appellant contends that the Examiner has provided no "motivation to combine a piezoelectric transducer with the teachings of Schaldach but rather, [provides] . . . a generalized statement of what is asserted as being taught by Turcott" (*id.*). In this regard, Appellant contends that "[n]o evidence has been provided that a skilled artisan would have attempted to introduce a piezoelectric transducer to the teachings of Schaldach" (*id.*). We are not persuaded.

We find no error in the Examiner's rationale that a person of ordinary skill in this art would have recognized "the obvious interchangability of mechanical transducers, such as piezoelectric transducers" with the "sound pickups", which as taught by Schaldach are known in principle (FF 6-7). *See, e.g., In re Fout*, 675 F.2d at 301.

CONCLUSION OF LAW

Appellant failed to meet his burden of establishing error in the Examiner's prima facie case of obviousness.

The rejection of claim 4 under 35 U.S.C § 103(a) as unpatentable over the combination of Schaldach and Turcott is affirmed. Claim 36 falls together with claim 4. 37 C.F.R. § 41.37(c)(1)(vii).

The combination of Schaldach and Kadhiresan:

ISSUE

Did Appellant meet his burden of establishing error in the Examiner's prima facie case of obviousness?

FINDINGS OF FACT

FF 19. The Examiner relies on Schaldach as set forth above (*see, e.g.,* Ans. 6).

FF 20. The Examiner finds that Schaldach fails to teach that at least one of "the plurality of electrodes is configured for subcutaneous, non-intrathoracic placement" (*id.*).

FF 21. Kadhiresan teaches "[a]n implantable monitor for collecting and storing for later telemetric readout physiologic data relating to cardiopulmonary performance" (Kadhiresan, Abstract).

FF 22. The Examiner finds that Kadhiresan teaches "providing cardiac electrodes to a subcutaneous, non-intrathoracic placement (col. 2, line 59)" (Ans. 6-7). Kadhiresan teaches that "[t]he monitor module . . . may be surgically implanted in various locations to optimize signal-to noise ratios" (Kadhiresan, col. 2, ll. 57-59; *see also* Ans. 6-7).

ANALYSIS

Claim 8 depends from and further limits at least one of the plurality of electrodes of claim 1 to an electrode configured for subcutaneous, non-intrathoracic placement.

Appellant contends that Kadhiresan fails to overcome the deficiency of Schaldach as it is applied to claim 1 (App. Br. 18). For the foregoing reasons we find no deficiency in the Examiner's reliance on Schaldach with regard to claim 1. Accordingly, we are not persuaded by Appellant's contention to the contrary.

Appellant contends that the Examiner has provided no "motivation to combine a subcutaneous, non-intrathoracic electrode with the teachings of Schaldach but rather, [provides] . . . a generalized statement of what is asserted as being taught by Kadhiresan" (App. Br. 19). In this regard, Appellant contends that "[n]o evidence has been provided that a skilled artisan would have attempted to introduce a subcutaneous, non-intrathoracic electrode to the teachings of Schaldach" (*id.*). We are not persuaded.

We find no error in the Examiner's rationale that a person of ordinary skill in this art would have modified the teachings of Schaldach with the cardiac electrodes of Kadhiresan to simplify implantation and maximize signal-to noise ratios (FF 22).

CONCLUSION OF LAW

Appellant failed to meet his burden of establishing error in the Examiner's prima facie case of obviousness.

The rejection of claim 8 under 35 U.S.C § 103(a) as unpatentable over the combination of Schaldach and Kadhiresan is affirmed. Claims 11 and 40 fall together with claim 8. 37 C.F.R. § 41.37(c)(1)(vii).

The combination of Schaldach and Gessman:

ISSUE

Did Appellant meet his burden of establishing error in the Examiner's prima facie case of obviousness?

FINDINGS OF FACT

FF 23. The Examiner relies on Schaldach as set forth above (*see, e.g.,* Ans. 7).

FF 24. The Examiner finds that Schaldach fails to teach that "the cardiac therapy comprises cardiac defibrillation therapy" (*id.*).

FF 25. Gessman teaches "[a]n apparatus for remotely monitoring the performance of an implanted cardioverter defibrillator includes a remote apparatus adapted which receives commands from and transmits data to a central monitoring facility over telephone communication channels" (Gessman, Abstract; *see also* Ans. 7).

FF 26. Gessman teaches that

> [a]n implanted defibrillator is a pacemaker-like device that senses intrinsic cardiac rhythm. If the device determines that a rapid, life threatening ventricular tachycardia or ventricular fibrillation is present, a battery within the device charges a large capacitor, and then discharges the capacitor to deliver a defibrillatory shock to the patient for the purpose of returning the heart to normal rhythm.

(Gessman, col. 1, ll. 15-22.)

ANALYSIS

Claim 14 depends from and further limits claim 1 to further comprise energy delivery circuitry coupled to the controller and at least some of the plurality of electrodes, the energy delivery circuitry configured to deliver a cardiac therapy, wherein the cardiac therapy comprises a cardiac defibrillation therapy.

Appellant contends that Gessman fails to overcome the deficiency of Schaldach as it is applied to claim 1 (App. Br. 19). For the foregoing reasons we find no deficiency in the Examiner's reliance on Schaldach with regard to claim 1. Accordingly, we are not persuaded by Appellant's contention to the contrary.

Appellant contends that "the Examiner has not provided the requisite evidence of motivation to combine the cited references as asserted" (App. Br. 20). We are not persuaded.

We find no error in the Examiner's rationale that a person of ordinary skill in this art would have modified the teachings of Schaldach with those of Gessman to "treat a variety of potentially life-threatening arrhythmias", e.g., ventricular tachycardia or fibrillation (FF 26; *see also* Ans. 7).

CONCLUSION OF LAW

Appellant failed to meet his burden of establishing error in the Examiner's prima facie case of obviousness.

The rejection of claim 14 under 35 U.S.C § 103(a) as unpatentable over the combination of Schaldach and Gessman is affirmed. Claims 18, 22-24, 31, 33, 34, 43, and 47 fall together with claim 14. 37 C.F.R. § 41.37(c)(1)(vii).

The combination of Schaldach and Riff:

ISSUE

Did Appellant meet his burden of establishing error in the Examiner's prima facie case of obviousness?

FINDINGS OF FACT

FF 27. The Examiner relies on Schaldach as set forth above (*see, e.g.,* Ans. 8).

FF 28. The Examiner finds that Schaldach fails to teach "a patient actuatable trigger configured to communicate a trigger signal to the controller via the communications circuitry, the controller initiating storing of the cardiac electrical signal and the audio signal in the memory in response to the trigger signal" (*id.*).

FF 29. Riff teaches "[a] method and system [that] facilitates the access by a patient of implanted medical device related data for patient participation in their own clinical care and therapy" (Riff, Abstract).

FF 30. The Examiner finds that Riff teaches a "patient-actuatable trigger" that is used to obtain information about a patient's heart condition (Ans. 8; Riff, col. 3: ¶ 0026).

ANALYSIS

Claim 15 depends from claim 1 and further requires a patient actuatable trigger configured to communicate a trigger signal to the controller via the communications circuitry, the controller initiating storing of the cardiac electrical signal and the audio signal in the memory in response to the trigger signal.

Appellant contends that Riff fails to overcome the deficiency of Schaldach as it is applied to claim 1 (App. Br. 20). For the foregoing reasons we find no deficiency in the Examiner's reliance on Schaldach with regard to claim 1. Accordingly, we are not persuaded by Appellant's contention to the contrary.

Appellant contends that "the Examiner has not provided the requisite evidence of motivation to combine the cited references as asserted" (App. Br. 20). We are not persuaded.

We find no error in the Examiner's rationale that a person of ordinary skill in this art would have modified the teachings of Schaldach with those of Riff to "provide current cardiac information when a user desires" the information (FF 30; *see also* Ans. 8).

CONCLUSION OF LAW

Appellant failed to meet his burden of establishing error in the Examiner's prima facie case of obviousness.

The rejection of claim 15 under 35 U.S.C § 103(a) as unpatentable over the combination of Schaldach and Riff is affirmed. Claims 26-29, 42, and 48 fall together with claim 15. 37 C.F.R. § 41.37(c)(1)(vii).

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

Appeal 2008-3838
Application 10/801,139

mls

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